

WHAT IS CLAIMED IS:

1. A method for treating a pulmonary disorder associated with depletion of the S-nitrosogluthathione pool in the lung or depletion of the glutathione pool in the lung or production of reactive oxygen species in the lung in a patient having such disorder which comprises delivering  
5 into the lungs of said patient as a gas, a therapeutically effective amount of an agent, which causes repletion or increase of the S-nitrosogluthathione pool in the lung or protects against toxicity where glutathione is depleted in the lung or where reactive oxygen species are increased in the lung and does so independently of reaction with oxygen.

2. The method of Claim 1 where the pulmonary disorder is associated with  
10 hypoxemia and/or smooth muscle constriction in the lungs and/or lung infection and/or lung injury.

3. The method of Claim 2 where the agent is naturally a gas.

4. The method of Claim 3 where the agent comprises NOX where X is halogen or  
hydrogen.

5. The method of Claim 3 where the agent comprises  $N_2O_3$ .

6. The method of Claim 3 where the agent comprises  $H_2S$ .

7. The method of Claim 1 where N-acetylcysteine is also administered, the  
administration of the N-acetylcysteine being in an amount effective to mediate repletion or  
increase of the S-nitrosogluthathione pool or potentiate the effect of said agent, in the lung.

8. The method of Claim 1 where ascorbate is also administered, the administration of  
20 the ascorbate being in an amount effective to mediate repletion or increase of the  
nitrosogluthathione pool in the lung and/or protect the lung from injury.

9. The method of Claim 1 where liquid HNO is also administered, the administration of the HNO being in an amount effective to mediate repletion or increase of S-nitrosoglutathione pool in the lung.